XR-1253/XRS-103

SERVICE MANUAL

East European Model

Photo : XR-1253

- Model XRS-103 is model XR-1253 attached with a speaker.

Model Name Using Similar Mechanism	XR-1553
Tape Transport Mechanism Type	MG-301TN-38

SPECIFICATIONS

Cassette player section

Tape track	4-track 2-channel stereo
Wow and flutter	0.2 % (WRMS)
Frequency response	50 – 15,000 Hz
Signal-to- noise ratio	50 dB

Tuner section

FM

Tuning range	FM1: 65 – 74 MHz FM2: 87.5 – 108 MHz
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	12 dBf
Selectivity	65 dB at 400 kHz
Signal-to-noise ratio	55 dB (stereo), 60 dB (mono)
Harmonic distortion at 1 kHz	1.5 % (stereo), 1.0 % (mono)
Separation	25 dB at 1 kHz
Frequency response	30 – 15,000 Hz
Capture ratio	9 dB

MW/LW

Tuning range	MW: 522 – 1,611 kHz LW:153 - 281 kHz
Antenna terminal	External antenna connector
Intermediate frequency	450 kHz
Sensitivity	MW: 35 µV LW: 70 µV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	7 W × 4 (at 4 ohms) 15 W × 2 (at 4 ohms)

General

Output lead	Power antenna relay control lead
Tone controls	12 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 188 × 58 × 170 mm (w/h/d) not incl. projecting parts and controls
Mounting dimension	Approx. 182×53×165mm (w/h/d) not incl. projecting parts and controls
Mass	Approx. 1.5 kg
Supplied accessories	Mounting hardware (1 set)

Design and specifications are subject to change without notice.

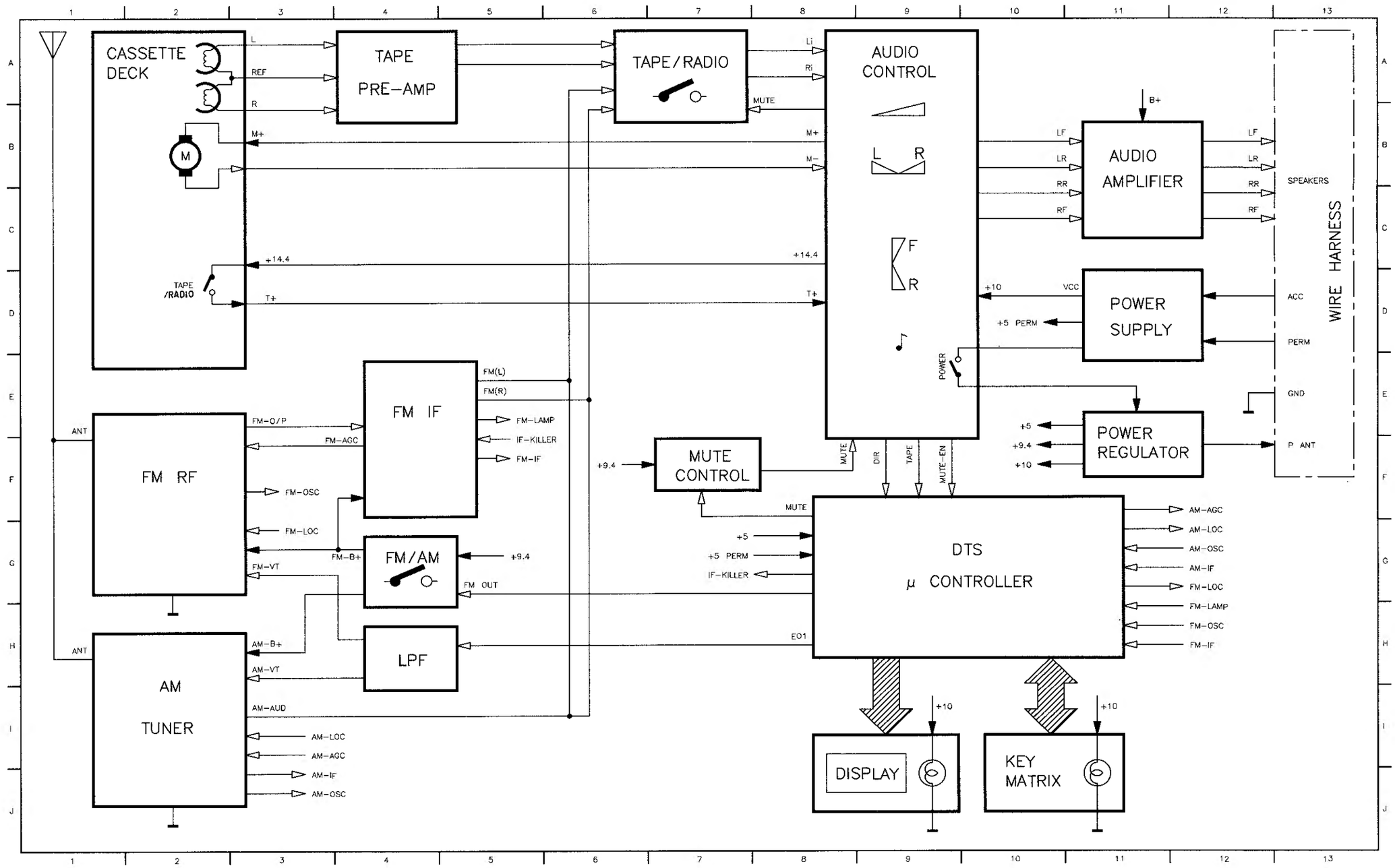
—Continued on next page—

使用時は添付資料も参照のこと
Refer to the additional documents.

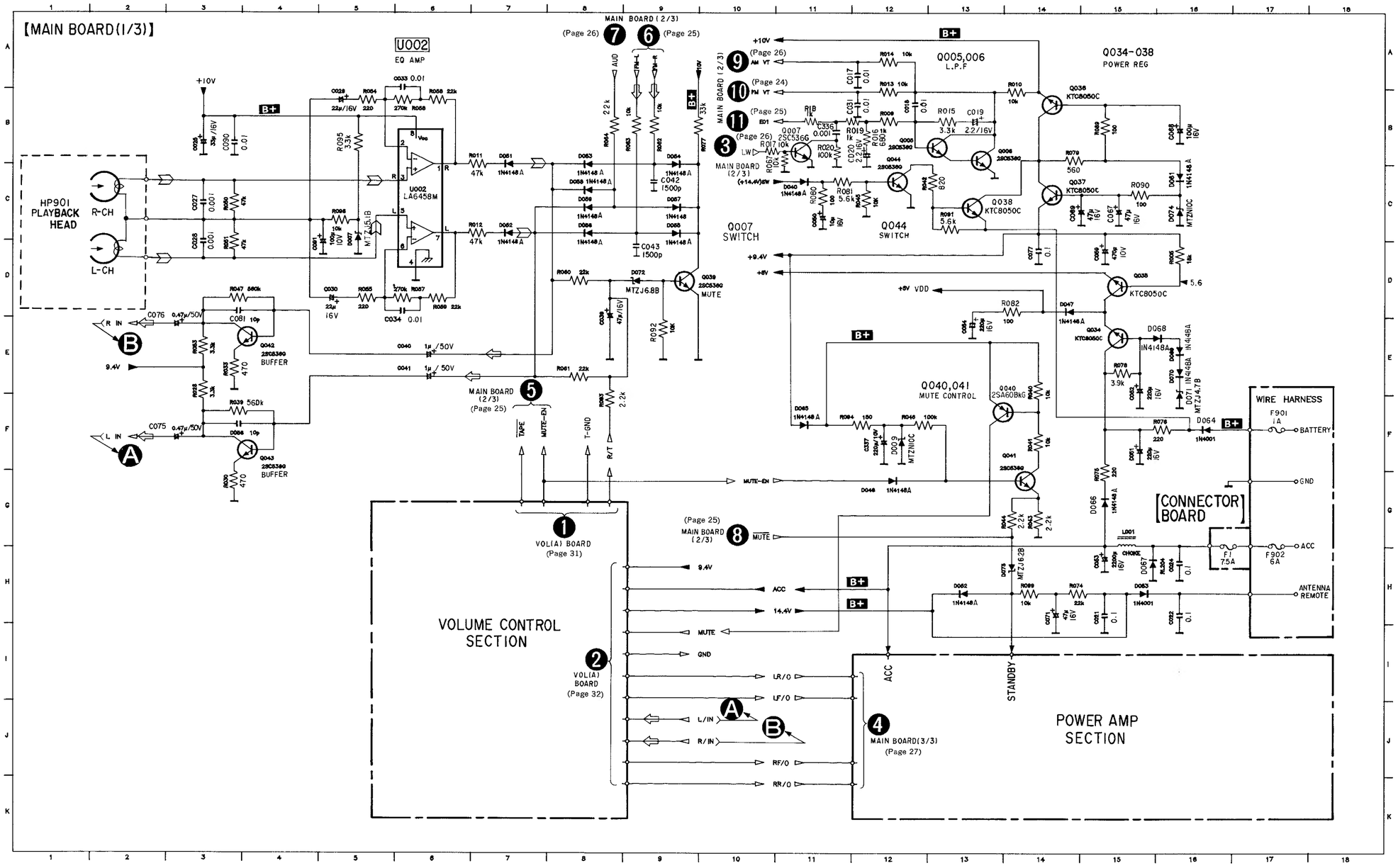
FM/MW/LW CASSETTE CAR STEREO

SONY®

5-2. BLOCK DIAGRAM



5-4. SCHEMATIC DIAGRAM—MAIN SECTION (1/3)—



● Voltage Value List

Ref. No.
U002

Pin No.	Vdc
1	4.60
2	4.60
3	4.60
4	0
5	4.60
6	4.60
7	4.60
8	10.10

Ref. No.	E (Vdc)	C (Vdc)	B (Vdc)
Q005	0.60	1.00	1.00
Q006	0	1.00	0.60
Q007	0	0	0
Q034	5.00	11.70	5.60
Q035	4.50	5.00	5.60
Q036	10.30	14.10	10.30
Q037	9.60	14.10	10.30
Q038	14.10	14.10	2.20
Q039	0	10.30 (0)	0 (0.7)
Q040	13.30	0	13.30
Q041	2.10	2.20	13.30
Q042	1.10	3.80	1.40
Q043	1.10	3.80	1.40
Q044	11.70	2.20	14.40

Note :

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- B+ : B+ Line
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATTERY terminals.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM
  ( ) : PB
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ⇨ : PB

● Voltage Value List

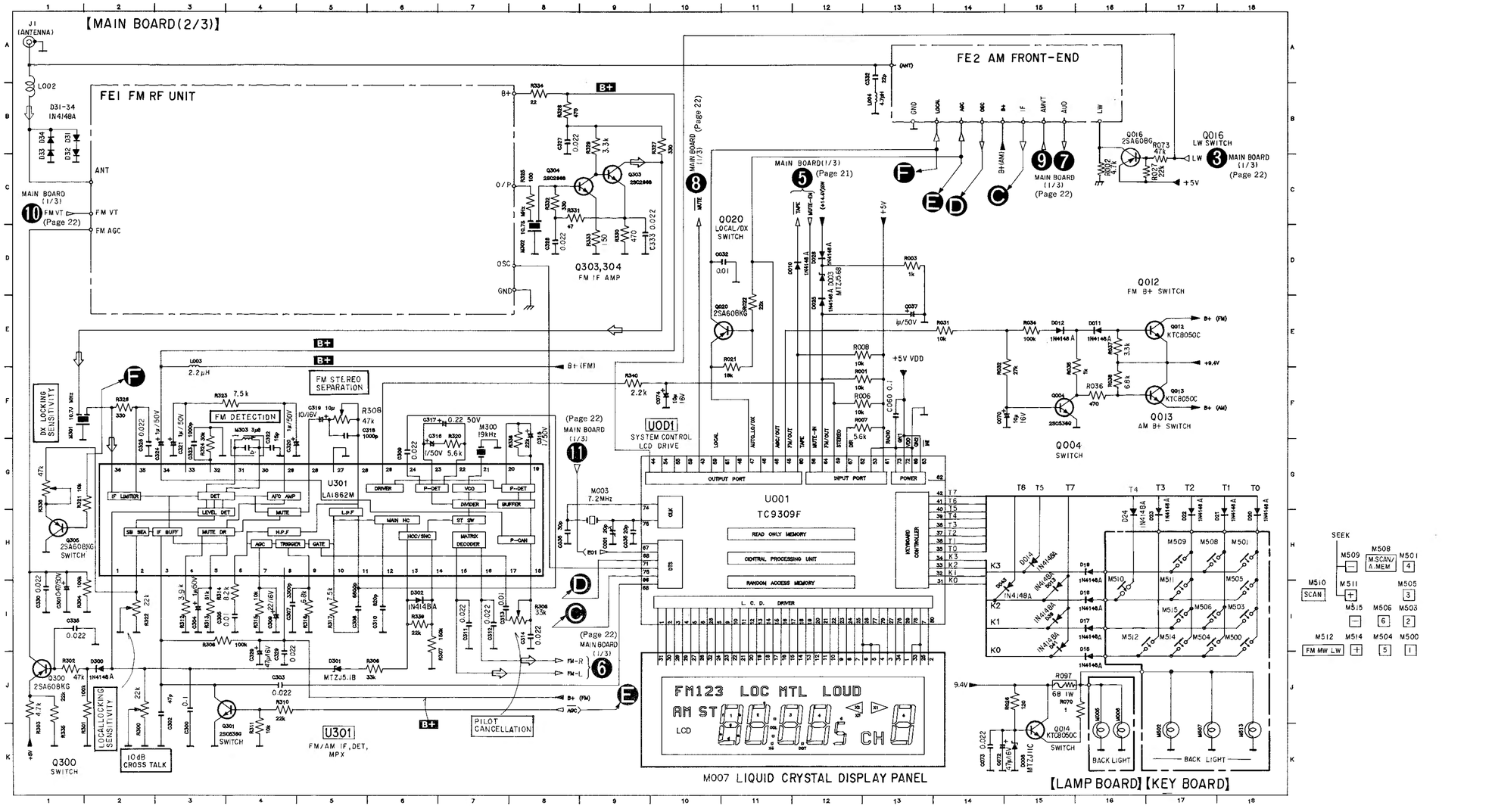
Ref. No. –U301 Pin No.	Vdc
1	4.10
2	2.0
3	0
4	1.40
5	0
6	2.80
7	0.40
8	9.60
9	0
10	4.80
11	4.80
12	2.80
13	1.0
14	0.98
15	3.00
16	3.00
17	4.80
18	10.00mV
19	3.40
20	3.40
21	3.70
22	8.00mV
23	3.40
24	4.80
25	4.60
26	4.80
27	0
28	4.00
29	4.80
30	3.90
31	3.90
32	2.00
33	4.80
34	3.40
35	3.70
36	3.70

Ref. No.	E (Vdc)	C (Vdc)	B (Vdc)
Q004	12.00mV	8.70	0.70
Q012	9.60	9.60	8.90
Q013	0.10	9.50	0.70
Q014	11.10	13.90	11.80
Q016	5.00	5.00	4.30
Q020	0	0 (0.5)	2.00 (0.40)
Q300	3.80	3.80	3.80
Q301	0	0 (0.40)	0.60 (0)
Q303	1.00	7.00	1.50
Q304	0.30	1.50	1.00
Q305	0	0	0.50

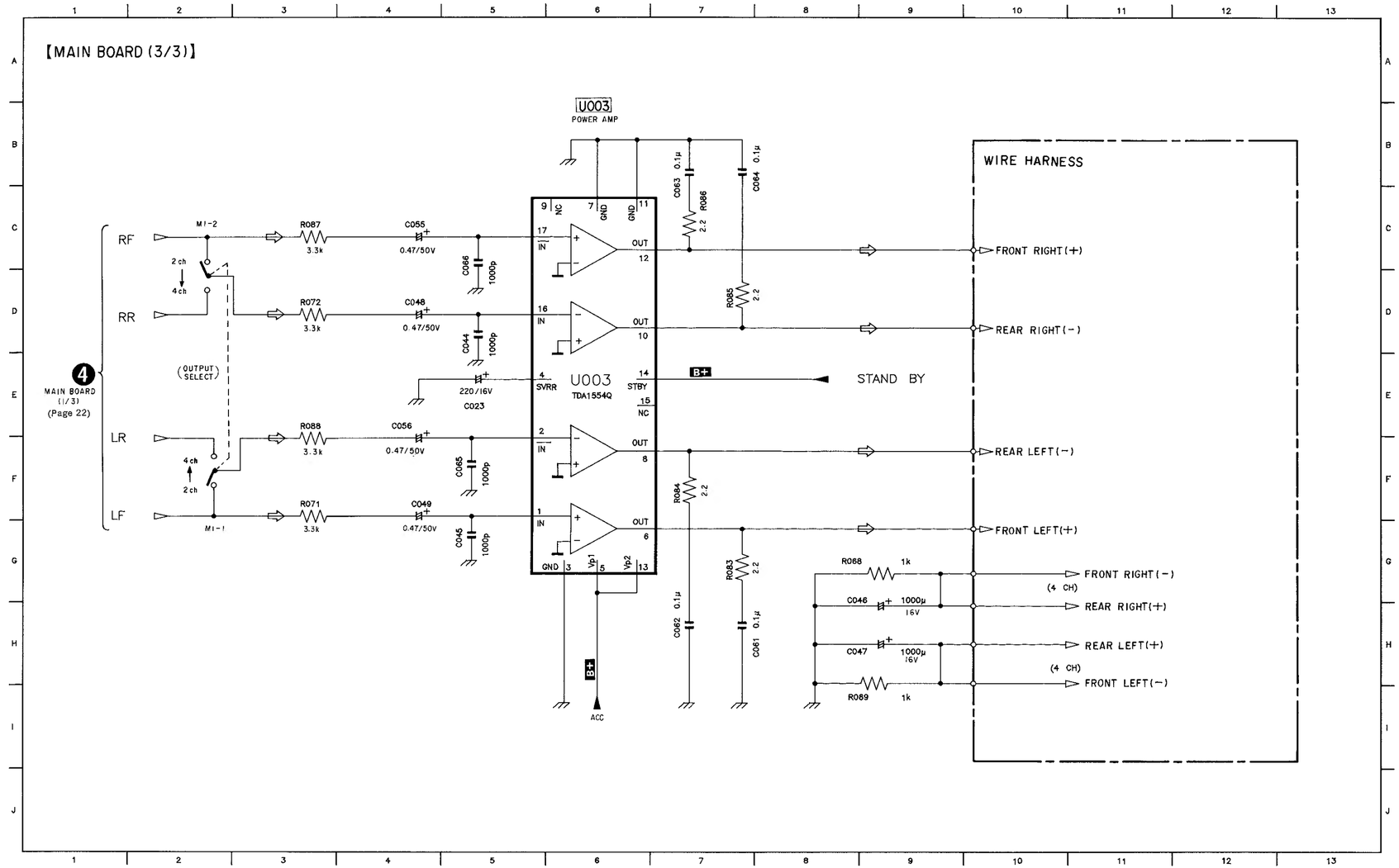
Note :

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- : fusible resistor.
- B+ : B+ Line
- : adjustment for repair.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATTERY terminals.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM
  ( ) : PB
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM

5-5. SCHEMATIC DIAGRAM—MAIN SECTION (2/3)—



5-6. SCHEMATIC DIAGRAM—MAIN SECTION (3/3)—



• Voltage Value List

Ref. No.
U003

Pin No.	Vdc
1	2.20
2	2.20
3	0
4	6.90
5	14.20
6	6.90
7	0
8	6.90
9	6.90
10	6.90
11	0
12	6.90
13	14.20
14	8.80
15	0
16	2.20
17	2.20

Note :

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- B+ : B+ Line
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATTERY terminals.
- Voltage is dc with respect to ground under no-signal (detund) conditions.
- no mark : FM
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM

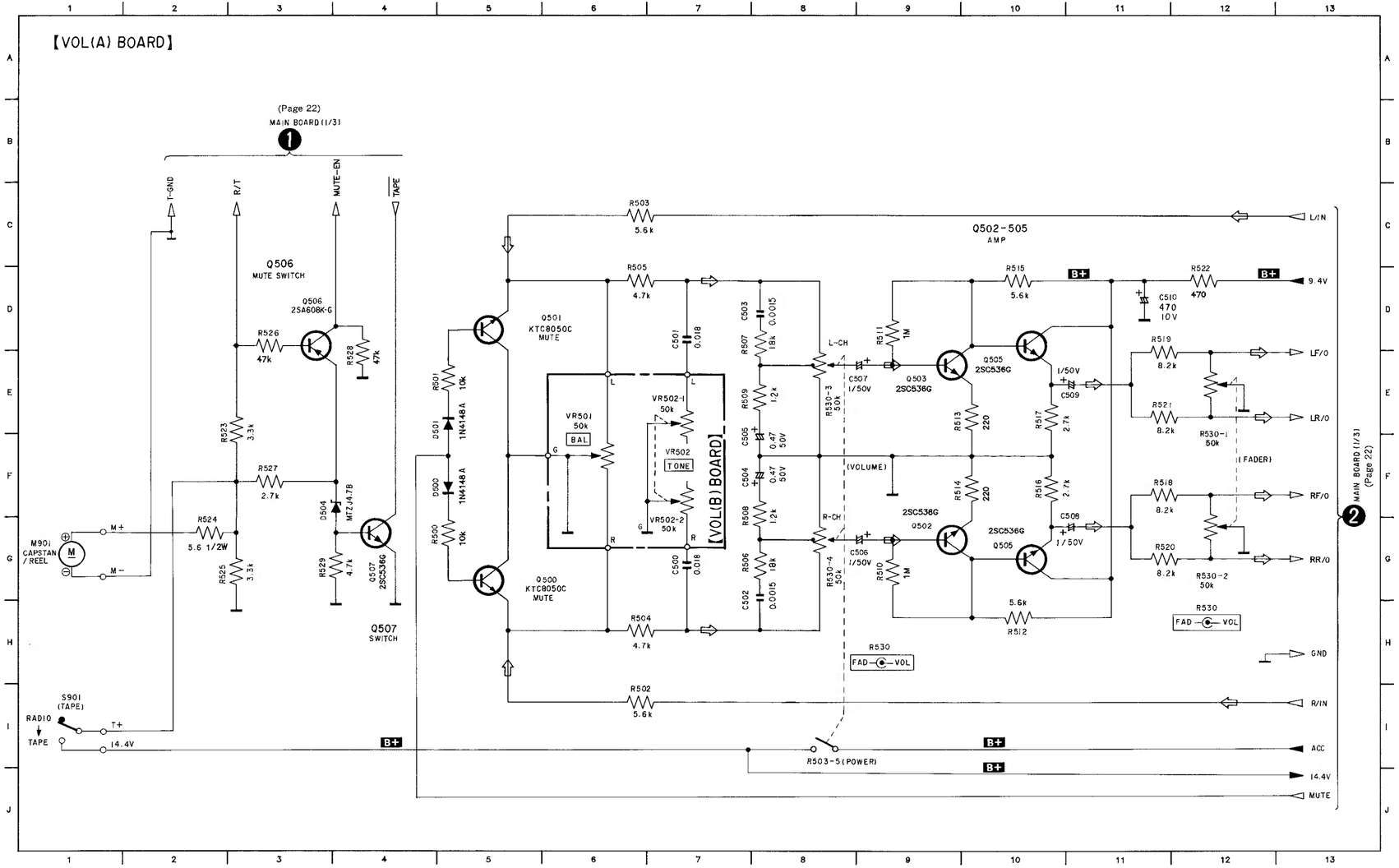
• Voltage Value List

Ref. No.	E (Vdc)	C (Vdc)	B (Vdc)
Q500	0	0	−0.80
Q501	0	0	−0.80
Q502	0.20	3.00	0.80
Q503	0.20	3.00	0.80
Q504	2.40	7.90	3.20
Q505	2.40	7.90	3.20
Q506	0	0.20 (4.80)	0.50 (4.80)
Q507	0	4.70 (0)	0 (0.80)

Note :

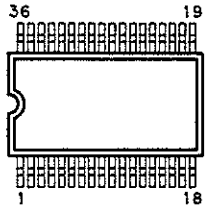
- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- B+ : B+ Line
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATTERY terminals.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM

5-7. SCHEMATIC DIAGRAM—VOLUME SECTION—

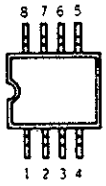


5-9. SEMICONDUCTOR LEAD LAYOUTS

LA1862M

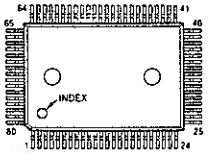


LA6458M



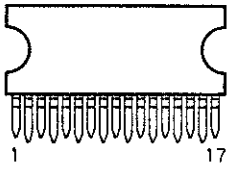
(TOP VIEW)

TC9309F

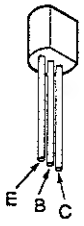


(TOP VIEW)

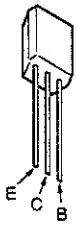
TDA1554Q



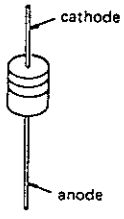
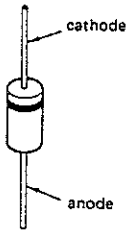
KTC8050C



2SA608K-G
2SC536-G
2SC2668-O



MTZN-10C
RD11ES-B3
RD5.1ES-B2
RD5.6ESB2
RD6.2ESB2
RD6.8ES-B2
RL204
UZ-4.7BSC



1N4148A
10E2